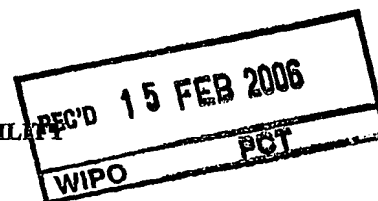


PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference 31649-2137	<div style="display: flex; justify-content: space-between;"> FOR FURTHER ACTION See Form PCT/IPEA/416 </div>																	
International application No. PCT/CA2004/001674	International filing date (day/month/year) 14 September 2004 (14-09-2004)	Priority date (day/month/year) 15 September 2003 (15-09-2003)																
International Patent Classification (IPC) or national classification and IPC IPC: C12Q 1/68 (2006.01), C12Q 1/00 (2006.01)																		
Applicant PERFORMANCE GENOMICS INC. ET AL																		
<ol style="list-style-type: none"> 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: <ol style="list-style-type: none"> a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>7</u> sheets, as follows: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. 1 and the Supplemental Box. </div> b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). 4. This report contains indications relating to the following items: <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input checked="" type="checkbox"/> Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/> Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/> Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/> Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/> Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/> Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> 			<input checked="" type="checkbox"/> Box No. I	Basis of the report	<input type="checkbox"/> Box No. II	Priority	<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/> Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/> Box No. VI	Certain documents cited	<input type="checkbox"/> Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/> Box No. VIII	Certain observations on the international application
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<input checked="" type="checkbox"/> Box No. VIII	Certain observations on the international application																	
Date of submission of the demand 15 July 2005 (15-07-2005)	Date of completion of this report 1 February 2006 (01-02-2006)																	
Name and mailing address of the IPEA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001(819)953-2476	Authorized officer <div style="text-align: right;">Qianfa Chen (819) 994-1374</div>																	

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/CA2004/001674

Box No. I Basis of the report

1. With regard to the language, this report is based on:
- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- ☒ pages 1-62 as originally filed/furnished
- ☐ pages* received by this Authority on _____
- ☐ pages* received by this Authority on _____
- ☒ the claims:
- ☐ pages as originally filed/furnished
- ☐ pages* as amended (together with any statement) under Article 19
- ☒ pages* 63-69 containing claims 1-69 received by this Authority on 13 January 2006 under Article 34
- ☐ pages* received by this Authority on _____
- ☒ the drawings:
- ☒ pages 1/83-83/83 as originally filed/furnished
- ☐ pages* received by this Authority on _____
- ☐ pages* received by this Authority on _____
- ☒ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☒ the claims, Nos. 1-75 received on 15 July 2005
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/CA2004/001674**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	<u>1-69</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-69</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-69</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following document (cited in the ISR)

D1- HOLZENBERGER, M. et al. Nature, 9 January 2003, Vol.421, pages 182-187.

Novelty and Inventive Step

Claims 1-69 meet the criteria set out in Articles 33(2)-(3) of the PCT, because the prior art does not describe a method for use in genetically identifying, screening a murine, porcine, or a bovine animal with respect to its potential to reproductive longevity by the detection of a specific genotype or a single polymorphism in the insulin-like growth factor 1 receptor gene (IGF-1R).

The closest prior art D1 describes the generation and characterization of IGF-1R gene knockout mice by the deletion of one or two copies of the IGF-1R gene. Although an increasing lifespan is observed in the heterozygous knockout mice (i.e., IGF-1R +/-, homozygous null mutants are not viable) as compared to the wild-type littermates, the heterozygous IGF-1R knockout mutants (IGF-1R +/-) and the wild-type female controls (IGF-1R +/+) display indistinguishable profiles when phenotypes such as the age-related decline in female fertility, the frequency of pregnancies, and the number of live newborns, are analyzed.

Industrial Applicability

Claims 1-69 have industrial applicability as defined under Article 33(4) of the PCT.

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/CA2004/001674

Box No. VIII **Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 1, 3, 25, 44, 45, 51, 65 and 69, as they respectively relate to murine, cattle or bovine animal, do not comply with Article 6 of the PCT because there is no support in the present description for the subject matter of these claims. Specifically, the description does not describe a method for use in genetically identifying or screening a murine, a cattle or a bovine animal with respect to its reproductive longevity by assaying the presence of a polymorphism or genotype of the porcine IGF-1R gene (SEQ ID NO: 7). A polymorphism of a gene present in one animal species is not necessarily present in a different animal species. For example, the porcine IGF-1R gene (SEQ ID NO: 7) has only 82% sequence identity to the murine IGF-1R gene (SEQ ID NO: 1).

Claim 65 does not comply with Article 6 of the PCT because a murine animal does not have a nucleic acid sequence having at least 95% sequence identity to SEQ ID NO: 7. The porcine IGF-1R gene (SEQ ID NO: 7) has only 82% sequence identity to the murine IGF-1R gene (SEQ ID NO: 1).

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/CA2004/001674

Supplemental Box relating to Sequence Listing

Continuation of Box No.1, item 2:

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this report was established on the basis of:
 - a. type of material
 - ☒ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☒ on paper
 - ☒ in electronic form
 - c. time of filing/furnishing
 - ☒ contained in the international application as filed
 - ☐ filed together with the international application in electronic form
 - ☐ furnished subsequently to this Authority for the purposes of search and/or examination
 - ☐ received by this Authority as an amendment* on
2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

* If item 4 in Box No. 1 applies, the listing and/or table(s) related thereto, which form part of the basis of the report, may be marked "superseded".

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